

INTERNATIONAL TELECOMMUNICATION UNION



WRC-2000

**WORLD
RADIOCOMMUNICATION
CONFERENCE**

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PLENARY MEETING

United States of America

Proposal for Agenda Item 1.6.1

review of spectrum and regulatory issues for advanced mobile application in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the table of frequency allocations as necessary

INTRODUCTION: The following proposal identifies bands to be considered by Administrations for use for IMT-2000 and other advanced communications applications. The proposal includes a modification to RR S5.388 and associated modifications to the Table of Frequency Allocations. Furthermore, it includes two supporting resolutions.

This proposal contains the following key characteristics:

1. In the order to facilitate Administrations identifying bands for national use, sufficient to provide for advanced communications applications, and to encourage global harmonization, it identifies additional spectrum in several bands for the terrestrial and satellite components;
2. Bands are identified that are inclusive of the major bands being considered around the world, thereby facilitating national choice and increasing the possibility of international consensus;
3. The bands are discussed as “bands or portions thereof” clarifying that Administrations may select different parts of the bands depending on their requirements and current uses;
4. It keeps together footnote text related to IMT-2000 for simple reference and decreases the potential for inconsistencies in text for different bands. In this way it also avoids unnecessarily breaking the footnote into regional or country groups;
5. Via use of the term “advanced communications applications” including IMT-2000, it prepares for the inevitable technology changes;
6. It encourages the evolution of current technology and the freedom of service providers to select technology given market demands;
7. It clarifies the regulatory meaning of the footnote so that there is no confusion regarding international obligations or cross-border coordination priorities;

8. It recognizes the need of many Administrations to continue to study these bands for possible use for advanced communications applications and provides a mechanism to report the results of those studies and national decisions to the next WRC;
9. It invites the ITU to perform key studies; and
10. It provides for a future conference agenda item to consider the results of the studies.

BACKGROUND INFORMATION: The United States supports the development and implementation of advanced communications applications and technologies, such as IMT-2000. These applications will serve as critical components of the communications and information infrastructure of the future. As modified in this proposal, RR S5.388 and Resolution IMT will facilitate the development of advanced communications applications by identifying spectrum in several bands for consideration for use by administrations.

At the same time, the proposal takes into account the fact that many Administrations are studying, and will continue to study (see proposed Resolution NO. S5.388), the 698-960 MHz, 1710-1885 MHz and 2500-2690 MHz bands or portions thereof to determine the possibility of sharing between existing applications and new advanced communications applications, to assess the requirements and benefits of existing services, and to consider various means to facilitate global roaming. The results of these studies will be useful for administrations wishing to implement advanced communications applications including IMT-2000. To preserve each Administration's flexibility to use these bands for other fixed and mobile systems as they may deem necessary to their national interest (particularly in light of the ongoing studies), this proposal clarifies that flexibility to use these bands within the broadly-defined service allocations in those bands.

Over the past decade, the use of cellular-type personal mobile communications services has grown tremendously worldwide. Studies in the ITU and elsewhere indicate that this growth in personal communications will likely continue and additional spectrum will be needed to accommodate this growth. Moreover, many administrations that initially introduced analog-based services in certain bands are transitioning those services to digital technology. To facilitate the continued growth of advanced communications applications, the United States considers it essential to provide a domestic regulatory framework that allows operators to transition easily from existing analog and even digital systems to more advanced communications applications of the future, such as IMT-2000.

IMT-2000 will provide terrestrial and satellite-based broadband and multi-media capabilities, and represents a path for the evolution of existing cellular and personal communications services as the market demands. The United States recognizes that consideration of spectrum issues related to advanced communications applications are vital for Administrations to plan their spectrum use and for operators to plan how they will meet future market demands.

DISCUSSION:

The United States proposes the identification of spectrum in several bands for consideration by Administrations for the implementation of IMT-2000 and other advanced communications applications. Specifically, the proposed modified S5.388 and Resolution IMT identify the 698-960 MHz, 1525-1559 MHz, 1610-1660.5 MHz, 1710-2025 MHz, 2110-2200 MHz, 2483.5-2690 MHz

bands for potential IMT-2000 use.¹ The proposal acknowledges that many Administrations, including the United States, continue to study some of the available spectrum to determine its feasibility for use by IMT-2000 and other advanced communications applications within the national boundaries of that particular Administration. For that reason, the United States calls for the adoption of Resolution NO. S5.388 addressing national studies as well as ITU-R studies related to the 698-960 MHz, 1710-1885 MHz and 2500-2690 MHz bands. Completion of these national studies will clarify whether or not Administrations conducting studies can make those bands available for use by IMT-2000 and other advanced communications applications. ITU studies will look at aspects to facilitate the implementation of these new technologies.

To facilitate the evolution of existing analog and digital systems to advanced communications applications such as IMT-2000 and beyond, the United States believes that it is essential not to tie specific technologies to specific frequency bands. In keeping with its technology-neutral belief that existing mobile operators should be free to evolve to IMT-2000 and beyond as the market demands, the United States has proposed several bands for the terrestrial and satellite components of IMT-2000 that are already allocated for mobile and mobile satellite services. Advanced communications applications including IMT-2000 will naturally evolve from existing technologies in response to market demand, allowing current operators and new licensees in existing mobile and mobile-satellite bands to bring advanced services to consumers as rapidly as new technology allows. This approach has the advantage of not artificially tying the rollout of new technology and service to new spectrum as Administrations assess their ability to use that spectrum for IMT-2000 and other advanced communications applications. Although the ITU plays an invaluable role in facilitating advanced communications applications, it will be Administrations, technology developers, equipment manufacturers and service providers that will ultimately decide when to introduce advanced communications applications based on market factors. The United States believes that support for this evolutionary approach in existing mobile bands will likely lead to a more expeditious implementation of advanced communications applications in bands that overlap globally.

The United States realizes that it will not be possible by WRC-2000 for many Administrations to identify the large amount of contiguous spectrum for near-term IMT-2000 use in a globally harmonized manner as may be desirable. The difficulty results from the need of many Administrations to consider the investment of existing licensees, the impact on consumers and other users of existing services and the flexibility to authorize other systems based on national needs. Specifically, many Administrations are currently studying existing and emerging uses in the 698-960 MHz, 1710-1855 MHz and 2500-2690 MHz bands to determine their ability to use the spectrum for IMT-2000 and other advanced communications applications, the availability of comparable replacement spectrum to which current and emerging uses might migrate, and the costs of relocation against the benefits of global harmonization of spectrum for IMT-2000 and other advanced communications systems. Completion of the studies addressed by Resolution NO. S5.388 will clarify the degree to which spectrum will be available globally or regionally in time for further discussion at the next competent WRC.

¹ Regarding the frequency bands 1525-1559 MHz and 1626.5-1660.5 MHz, identified for the satellite component of IMT-2000, there are associated WRC-2000 issues in Agenda Item 1.10 and Resolution 218 that need to be resolved regarding AMS(R)S. If the satellite component of IMT-2000 uses these bands, account must be taken of the priority of AMS(R)S communications over all other communications as described in RR S5.357A and S5.362A.

SPECTRUM:

In accordance with the above principles, the United States believes the following bands should be identified for potential use by advanced communications applications, including IMT-2000. The bands are broken out by terrestrial and satellite components.

Terrestrial:

The United States proposes the following bands for the terrestrial component of advanced communications applications, including IMT-2000: 698-960 MHz, 1710-1885 MHz, 2500-2690 MHz.² In addition, the bands 1885-2025 MHz and 2110-2200 MHz, which are already included in **RR S5.388**, should continue to be listed for use by advanced communications applications, including IMT-2000. However, to eliminate any ambiguity in **RR S5.388**, the U.S. is proposing a modification that clarifies that administrations may continue to use spectrum identified for IMT-2000 and other advanced communications applications for other uses.

IMT-2000 will provide a wide variety broadband and multimedia applications providing a new level of worldwide access to information for business, education, community services, safety and entertainment. In order to fully realize the IMT-2000 vision and meet the growing demand for mobile services, it is necessary to provide spectrum in addition to the spectrum currently identified in No. S5.388 of the Radio Regulations and that available for 1st and 2nd generation applications. Section 1.1.1.1 of the CPM report notes that it is desirable to meet the projected IMT-2000 spectrum requirements by identifying a limited number of contiguous global bands in order to reduce the cost, size and complexity of IMT-2000 terminal and network equipment and deployment, and provide the economies of scale for the mass market.

Satellite:

The United States recognizes that their inherent global coverage of satellites makes them a key element of worldwide IMT-2000 service. As WRC-2000 considers the use of allocations for IMT-2000, it should identify sufficient global and regional spectrum for the satellite component of IMT-2000. The CPM Report notes that “[a]vailability of global spectrum is particularly important for the satellite component.” (Section 1.1.2.1). Further, the CPM Report advises that “[c]onsideration should be given to identifying existing MSS allocations between 1 and 3 GHz for satellite IMT-2000 applications. It is foreseen that most of the MSS bands between 1 and 3 GHz could be used for IMT-2000 in the longer term.” (Section 1.1.2.1).

The United States supports the CPM Report statements and proposes to identify the following existing MSS allocations in bands between 1 and 3 GHz for the satellite component of IMT-2000: 1525-1559 / 1626.5-1660.5 MHz, 1610-1626.5 / 2483.5-2500 MHz, 1980-2010 / 2170-2200 MHz, 2500-2520 / 2670-2690 MHz, and 2010-2025 / 2160-2170 MHz (Region 2 only). This proposal identifies existing allocations that should satisfy the projected MSS requirements through 2010, and avoids the extremely difficult task of allocating new worldwide spectrum for new technologies.

² Existing U.S. licensees operating in the 824-849 MHz, 869-894 MHz, 1850-1910 MHz and 1930-1990 MHz bands have expressed an interest in providing terrestrial IMT-2000 services in the future. In addition, the Federal Communications Commission has received specific proposals to permit advancing mobile telecommunications systems to operate terrestrially in the 746-764 MHz, 776-794 MHz and 2110-2150 MHz bands.

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for advanced communications applications such as IMT-2000.

USA/12/2
MOD

890-1 350 MHz

Allocation to services		
Region 1	Region 2	Region 3
890-942 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 Radiolocation S5.323 <u>MOD S5.388</u>	890-902 FIXED MOBILE except aeronautical mobile Radiolocation S5.318 S5.325 <u>MOD S5.388</u>	890-942 FIXED MOBILE BROADCASTING Radiolocation S5.327 <u>MOD S5.388</u>
	902-928 FIXED Amateur Mobile except aeronautical mobile Radiolocation S5.150 MOD S5.325 S5.326 <u>MOD S5.388</u>	
	928-942 FIXED MOBILE except aeronautical mobile Radiolocation S5.325 <u>MOD S5.388</u>	
942-960 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 S5.323 <u>MOD S5.388</u>	942-960 FIXED MOBILE <u>MOD S5.388</u>	942-960 FIXED MOBILE BROADCASTING S5.320 <u>MOD S5.388</u>

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for advanced communications applications such as IMT-2000.

USA/12/3
MOD

1 525-1 610 MHz

Allocation to services		
Region 1	Region 2	Region 3
1 525-1 530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile except aeronautical mobile S5.349 S5.341 S5.342 S5.350 S5.351 S5.352A S5.354 <u>MOD S5.388</u>	1 525-1 530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Fixed Mobile S5.343 S5.341 S5.351 S5.354 <u>MOD</u> <u>S5.388</u>	1 525-1 530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile S5.349 S5.341 S5.351 S5.352A S5.354 <u>MOD S5.388</u>
1 530-1 535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile S5.341 S5.342 S5.351 S5.354 <u>MOD S5.388</u>	1 530-1 535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile S5.343 S5.341 S5.351 S5.354 <u>MOD S5.388</u>	
1 535-1 559	MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 S5.353A S5.354 S5.355 S5.356 S5.357 S5.357A S5.359 S5.362A <u>MOD S5.388</u>	

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for advanced communications applications such as IMT-2000.

USA/12/4
MOD

1 610-1 660 MHz

Allocation to services											
Region 1				Region 2				Region 3			
1 610-1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION S5.341 S5.355 S5.359 S5.363 S5.364 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372 <u>MOD S5.388</u>				1 610-1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) S5.341 S5.364 S5.366 S5.367 S5.368 S5.370 S5.372 <u>MOD S5.388</u>				1 610-1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) S5.341 S5.355 S5.359 S5.364 S5.366 S5.367 S5.368 S5.369 S5.372 <u>MOD S5.388</u>			
1 610.6-1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION S5.149 S5.341 S5.355 S5.359 S5.363 S5.364 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372 <u>MOD S5.388</u>				1 610.6-1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) S5.149 S5.341 S5.364 S5.366 S5.367 S5.368 S5.370 S5.372 <u>MOD S5.388</u>				1 610.6-1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) S5.149 S5.341 S5.355 S5.359 S5.364 S5.366 S5.367 S5.368 S5.369 S5.372 <u>MOD S5.388</u>			
1 613.8-1 626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) S5.341 S5.355 S5.359 S5.363 S5.364 S5.365 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372 <u>MOD S5.388</u>				1 613.8-1 626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) S5.341 S5.364 S5.365 S5.366 S5.367 S5.368 S5.370 S5.372 <u>MOD S5.388</u>				1 613.8-1 626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) Radiodetermination-satellite (Earth-to-space) S5.341 S5.355 S5.359 S5.364 S5.365 S5.366 S5.367 S5.368 S5.369 S5.372 <u>MOD S5.388</u>			
1 626.5-1 660				MOBILE-SATELLITE (Earth-to-space) S5.341 S5.351 S5.353A S5.354 S5.355 S5.357A S5.359 S5.362A S5.374 S5.375 S5.376 <u>MOD S5.388</u>							

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for advanced communications applications such as IMT-2000.

USA/12/5
MOD

1 710-2 170 MHz

Allocation to services		
Region 1	Region 2	Region 3
1 710-1 930	FIXED MOBILE S5.380 S5.149 S5.341 S5.385 S5.386 S5.387 <u>MOD S5.388</u>	
1 930-1 970 FIXED MOBILE <u>MOD S5.388</u>	1 930-1 970 FIXED MOBILE Mobile-satellite (Earth-to-space) <u>MOD S5.388</u>	1 930-1 970 FIXED MOBILE <u>MOD S5.388</u>
1 970-1 980	FIXED MOBILE <u>MOD S5.388</u>	
1 980-2 010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) <u>MOD S5.388 S5.389A S5.389B S5.389F</u>	
2 010-2 025 FIXED MOBILE <u>MOD S5.388</u>	2 010-2 025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) <u>MOD S5.388 S5.389C S5.389D S5.389E S5.390</u>	2 010-2 025 FIXED MOBILE <u>MOD S5.388</u>
2 025-2 110	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) S5.392	
2 110-2 120	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) <u>MOD S5.388</u>	
2 120-2 160 FIXED MOBILE <u>MOD S5.388</u>	2 120-2 160 FIXED MOBILE Mobile-satellite (space-to-Earth) <u>MOD S5.388</u>	2 120-2 160 FIXED MOBILE <u>MOD S5.388</u>
2 160-2 170 FIXED MOBILE <u>MOD S5.388 S5.392A</u>	2 160-2 170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) <u>MOD S5.388 S5.389C S5.389D S5.389E S5.390</u>	2 160-2 170 FIXED MOBILE <u>MOD S5.388</u>

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment. To provide clear

guidance on the use of the frequency bands identified for advanced communications applications such as IMT-2000.

**USA/12/6
MOD S5.388**

The bands 698-960 MHz, 1 525-1 559 MHz, 1 610-1 660.5 MHz, 1710 4-885-2025 MHz, and 2 110-2 200 and 2 483.5-2 690 MHz, or portions thereof that are allocated to the mobile and mobile satellite services, are intended identified for use, on a worldwide basis, by Administrations wishing to implement advanced communications applications, such as International Mobile Telecommunications-2000 (IMT-2000) and beyond (See Resolution IMT). Such use is based on the equality of rights between all allocated radio services and does not ~~preclude the use~~ establish priority of assignments in these bands by among stations of the primary other services to which they are allocated. In accordance with Resolution YYY, studies regarding the possible use of the 698-960 MHz, 1 710-1 885 MHz and 2 500-2 690 MHz bands for advanced communications applications including IMT-2000 are being conducted in many countries and in the ITU-R, the results of which may impact the availability of those bands in those countries. The bands should be made available for IMT-2000 in accordance with Resolution 212 (WRC 97)

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment.

**USA/12/7
MOD**

2 170-2 520 MHz

Allocation to services		
Region 1	Region 2	Region 3
2 170-2 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) <u>MOD S5.388 S5.389A S5.389F S5.392A</u>	
2 200-2 290	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) S5.392	
2 290-2 300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
2 300-2 450 FIXED MOBILE Amateur Radiolocation S5.150 S5.282 S5.395	2 300-2 450 FIXED MOBILE RADIOLOCATION Amateur S5.150 S5.282 S5.393 S5.394 S5.396	

2 450-2 483.5 FIXED MOBILE Radiolocation S5.150 S5.397	2 450-2 483.5 FIXED MOBILE RADIOLOCATION S5.150 S5.394	
2 483.5-2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) Radiolocation S5.150 S5.371 S5.397 S5.398 S5.399 S5.400 S5.402 <u>MOD</u> <u>S5.388</u>	2 483.5-2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION RADIODETERMINATION-SATELLITE (space-to-Earth) S5.398 S5.150 S5.402 <u>MOD S5.388</u>	2 483.5-2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION Radiodetermination-satellite (space-to-Earth) S5.398 S5.150 S5.400 S5.402 <u>MOD</u> <u>S5.388</u>
2 500-2 520 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) S5.403 S5.405 S5.407 S5.408 S5.412 S5.414 <u>MOD S5.388</u>	2 500-2 520 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) S5.403 S5.404 S5.407 S5.414 S5.415A <u>MOD S5.388</u>	

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for advanced communications applications such as IMT-2000.

USA/12/8
MOD

2 520-2 700 MHz

Allocation to services		
Region 1	Region 2	Region 3
2 520-2 655 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.403 S5.405 S5.408 S5.412 S5.417 S5.418 <u>MOD</u> <u>S5.388</u>	2 520-2 655 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.403 <u>MOD</u> <u>S5.388</u>	2 520-2 535 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.403 S5.415A
		2 535-2 655 FIXED S5.409 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.418 <u>MOD</u> <u>S5.388</u>
2 655-2 670 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.412 S5.417 S5.420 <u>MOD</u> <u>S5.388</u>	2 655-2 670 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.420 <u>MOD</u> <u>S5.388</u>	2 655-2 670 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.420 <u>MOD</u> <u>S5.388</u>
2 670-2 690 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420 <u>MOD</u> <u>S5.388</u>	2 670-2 690 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420 <u>MOD</u> <u>S5.388</u>	2 670-2 690 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420 S5.420A <u>MOD</u> <u>S5.388</u>

Reasons: To identify spectrum for advanced communications applications including IMT-2000 to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for advanced communications applications such as IMT-2000.

USA/12/9
NOC

2 700-4 800 MHz

Allocation to services		
Region 1	Region 2	Region 3
2 700-2 900	AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.423 S5.424	

Reasons: The band 2700-2900 MHz is used worldwide by radar systems critical for flight safety and weather reporting.

USA/12/10
SUP

~~**RESOLUTION 212 (Rev.WRC-97)**~~

~~**Implementation Of International Mobile
Telecommunications 2000 (IMT-2000)***~~

Reasons: Consequential to USA/12/6.

* IMT-2000 was previously known as Future Public Land Mobile Telecommunication Systems (FPLMTS).

USA/12/11
ADD

RESOLUTION IMT (WRC-2000)

**GLOBAL ADVANCED COMMUNICATIONS APPLICATIONS
INCLUDING INTERNATIONAL MOBILE TELECOMMUNICATIONS-
2000 (IMT-2000)**

The World Radiocommunication Conference (Istanbul, 2000),

considering

- a)* that IMT-2000 is the ITU vision of global mobile access and is scheduled to start service around the year 2000;
- b)* that IMT-2000 is an advanced communications applications concept intended to provide telecommunications services on a worldwide scale regardless of location, network or terminal used;
- c)* that through integration of terrestrial mobile and mobile-satellite systems, different types of wireless access will be provided globally, including services available through the fixed telecommunications networks and those specific to mobile users;
- d)* that global roaming and the economies of scale of a global market are desirable and can be best achieved through the availability of worldwide spectrum for IMT-2000 systems, in particular for the satellite component, because of their global/international nature and their diverse technical characteristics;
- e)* that when such alignment is not possible, multi-band phones and other new technologies may assist in achieving global roaming;
- f)* that technological advancement and market demand encourage the use of flexible regulatory approaches that will promote innovation and accelerate the delivery of advanced communication applications to consumers;
- g)* that ITU Recommendations accommodate the transition from earlier technologies to future technologies;
- h)* that for technical reasons, such as propagation factors and equipment design, the ITU-R has determined that consideration of additional spectrum requirements for the mobile users of IMT-2000 be focused on the frequency range below 3 GHz, however, the existing applications below 3 GHz were implemented in their current bands for similar technical reasons;
- j)* that ITU-R Report M.[IMT.SPEC] Spectrum Requirements for IMT-2000, forecasts a need for additional spectrum on a global basis for the terrestrial and satellite components in the year 2010;
- k)* that the radio specifications for IMT-2000, as well as their various technical characteristics, as presented in ITU-R Recommendations, support the evolution of first and second generation mobile systems to IMT-2000;

l) that there have been high levels of investment in existing systems that may not evolve to or be able to share with IMT-2000 systems. These systems may continue to operate in the bands or portions of the bands identified for advanced communications applications, thereby reducing the amount of global spectrum potentially available to support those new applications;

m) that RR S5.388 identifies bands for use by IMT 2000 systems.

noting

a) that Administrations may implement IMT-2000 in any frequency band allocated to the mobile or mobile-satellite service;

b) that the identification of spectrum for IMT-2000 does not convey any status under the Radio Regulations of the ITU but does provide uniform guidance to Administrations, operators and manufacturers in terms of deploying advanced communications applications including IMT-2000;

c) that the implementation of the terrestrial component of IMT-2000, within the bands identified, is expected to commence in some bands as early as the year 2000, subject to market and technical considerations;

d) that the implementation of the satellite component of IMT-2000, in the bands identified and allocated to the MSS, could commence in some bands as early as the year 2000, subject to market and technical considerations;

e) that Administrations who use all or parts of the frequency bands identified for IMT-2000 for first and second generation mobile systems may ultimately want to deploy IMT-2000 in these bands;

f) that Administrations who use the frequency bands identified for IMT-2000 for applications other than mobile systems as specified in *noting e)* may want to give the operators of these systems the flexibility to either continue to provide the current services or to evolve their systems to the provision of other terrestrial services such as IMT-2000;

g) that some administrations will be conducting studies prior to making decisions on their implementation of certain bands;

h) that, in accordance with Resolution YYY, studies will be conducted in many countries and in the ITU-R regarding the possible implementation of advanced communications applications including IMT-2000 in portions of the identified bands;

invites Administrations

1 to adopt regulatory and spectrum decisions that protect the existing investment in mobile telecommunication systems and facilitate the ability for existing operators to evolve their systems towards IMT-2000 and beyond based on marketplace needs;

- 2 to adopt regulatory and spectrum decisions that ensure operators have the flexibility to provide the services and use the diverse technologies that best meet marketplace needs;
- 3 to give due consideration to protecting the investment in other existing radio services and to lessening the impact on existing users;
- 4 to adopt appropriate and reasonable mechanisms to address the cost of relocation and to ensure provision of comparable replacement spectrum in those cases where relocation is deemed necessary.

urges

that Administrations deploying IMT-2000 systems should use the relevant international technical characteristics, as identified by ITU-R and ITU-T Recommendations.

resolves

1 that Administrations planning to implement terrestrial advanced communications applications, including terrestrial IMT-2000 systems, consider the use of the bands or portions thereof: 698-960 MHz, 1 710 - 2 025 MHz, 2 110 - 2 200 MHz and 2 500 - 2 690 MHz (noting that the bands 2 500-2 520 MHz and 2 670-2 690 MHz are also identified for the satellite component);

2 that Administrations planning to implement satellite IMT-2000 systems, consider the use of the bands or portions thereof: 1 525-1 559/1 626.5-1 660.5 MHz, 1 610-1 626.5/2 483.5-2 500 MHz, 1 980-2 010/2 170-2 200 MHz, 2 500-2 520/2 670-2 690 MHz, and where appropriate within regional mobile satellite allocations consider the use of the bands or portion thereof: 2 520-2 535/2 655-2 670 MHz and 2 010-2 025/2 160-2 170 MHz (noting that the bands 2 500 – 2 690 MHz are also identified for the terrestrial component)¹;

Reasons: To support a flexible international allocation approach that preserves the prerogatives of Administrations to implement IMT-2000 systems as appropriate. This proposal supports the evolution of existing cellular and PCS systems to IMT-2000, while at the same time identifying new spectrum for advanced communications applications.

¹ The 2 500 – 2 520 MHz and 2 670 – 2 690 MHz bands are also identified for use by the IMT-2000 terrestrial component. When considering such use prior to 1 January 2005 (See S5.414 and S5.419), administrations should recognize that this may limit the use of these MSS allocations by the satellite component of IMT-2000.

USA/12/12
ADD

RESOLUTION YYY (WRC-2000)

**ISSUES FOR FURTHER STUDY REGARDING THE
IMPLEMENTATION OF ADVANCED COMMUNICATIONS
APPLICATIONS SUCH AS INTERNATIONAL MOBILE
TELECOMMUNICATIONS-2000 (IMT-2000) IN THE FREQUENCY
BANDS IDENTIFIED IN NO. S5.388**

The World Radiocommunication Conference (Istanbul, 2000),

considering

- a)* that WRC-2000 has updated the identification of frequency bands available for advanced communications applications including IMT-2000, as stated in the modification to No. S5.388 and the new Resolution IMT(WRC-2000);
- b)* that all or portions of the bands identified for IMT-2000 are currently used by second generation mobile communication systems, systems of other Radio Services, or Mobile-Satellite systems;
- c)* that ITU-R Rec M.1036 is concerned with implementation considerations with respect to spectrum for IMT-2000 in the bands 1 885-2 025 MHz and 2 110-2 200 MHz;
- d)* that ITU-R Rec M.1308 is concerned with the evolution of existing mobile communication systems to IMT-2000;
- e)* that Administrations may have differing additional IMT-2000 spectrum requirements and may wish to implement IMT-2000 in certain frequency bands and not others, or may wish to implement IMT-2000 at different times;

considering further

- a)* that IMT-2000 is an advanced communications concept intended to provide telecommunications services on a worldwide scale regardless of location, network or terminal used;
- b)* that various technical approaches may be available in the future to provide for global roaming across mobile radio systems that operate in different frequency bands.

noting

- a)* that all or parts of the 1 850-1 910/1 930-1 990 MHz band are used by several Region 2 Administrations for second generation mobile communication systems and that the operators of these systems may wish to have these systems evolve to IMT-2000;

b) that all or parts of the 1 710-1 785/1 805-1 885 MHz are used by many Region 1 and 3 Administrations for second generation mobile communication systems and that the operators of such systems may want to use these bands for IMT-2000;

c) that Administrations who use the 2 500-2 690 MHz band for fixed systems may want to give the operators of these systems the flexibility to either continue to provide fixed services or to evolve to the provision of other advanced communications applications, such as IMT-2000;

d) that, due to the level of investment in current uses and difficulties in identifying spectrum alternatives, administrations [the United States, Administration A, Administration B, and Administration C...] continue to study the 698-960 MHz, 1710-1885 MHz and 2500-2690 MHz bands or portions of those bands for possible additional spectrum for IMT-2000 in their countries,

resolves

that Administrations should expeditiously complete their national studies and, at the next WRC, update the ITU regarding their selection of spectrum for advanced communication systems such as IMT-2000;

invites

1 the ITU-R to study how first and second generation mobile communication system band plans can be used to accommodate evolution of first and second generation mobile communication systems to IMT-2000;

2 the ITU-R to study means to facilitate global roaming across different regional band plans within the bands identified for IMT-2000;

3 the ITU-R to study the sharing issues related to the deployment of IMT-2000 systems in portions of the bands identified for IMT-2000.

Reasons: To recognize the need of many Administrations to continue to study these bands for possible use for advanced communications applications and provides a mechanism to report the results of those studies and national decisions to the next WRC.
